Boulder Creek Restoration Project

Non-Native Invasive Plants Report

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for:
Bonners Ferry Ranger District
Idaho Panhandle National Forests

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Introduction

This report discusses the environmental effects of implementation of the Boulder Creek Restoration Project (BCRP) on noxious weeds. A summary of this report is included in the environmental assessment.

The Forest Service Handbook (FSH 3409) defines a strategy for managing pests, including noxious weeds, as "a decision-making and action process incorporating biological, economic and environmental evaluation of pest-host systems to manage pest populations" (FSH 3409.11, 6/86). This strategy is termed Integrated Pest Management (IPM).

The overall Idaho Panhandle National Forests (IPNF) strategy is to contain weeds in currently infested areas and to prevent the spread of weeds to susceptible but generally uninfested areas. The 1989 IPNF Weed Pest Management EIS describes the strategy. Weed management activities in the district are guided by the Bonners Ferry Noxious Weed Control Project EIS (USDA Forest Service 1995).

Noxious weeds are those plant species that have been officially designated as such by federal, State or county officials. In Weeds of the West by Whitson *et al*. (1991), a weed is defined as "a plant that interferes with management objectives for a given area of land at a given point in time." The federal Noxious Weed Act of 1974 defines a noxious weed as "a plant which is of foreign origin, is new to, or is not widely prevalent in the United States, and can directly or indirectly injure crops or other useful plants, livestock or the fish and wildlife resources of the United States or the public health" (P.L. 93-629).

The Idaho Noxious Weed Law defines a "noxious weed" as any exotic plant species established or that may be introduced in the State which may render land unsuitable for agriculture, forestry, livestock, wildlife or other beneficial uses and is further designated as either a statewide or countywide noxious weed (Idaho Code 24 Chapter 22). Idaho has 64 different species of weeds that are designated as noxious by state law (ISDA 2011a).

In 2004, the Chief of the USDA Forest Service, Dale Bosworth, published a list of the four most serious threats to National Forest System lands, nationwide. One of the four was the threat posed by invasive species, including weeds. The US Forest Service National Strategy and Implementation Plan for Invasive Species Management provides a strategic direction towards achieving the goal of "reducing, minimizing or eliminating the potential for introduction, establishment, spread and impact of invasive species across all landscapes and ownerships."

Relevant Laws, Regulations, and Policy

Regulatory Framework

Federal legislation, regulations, policy, and direction that require development and coordination of programs for the control of noxious weeds and evaluation of noxious weeds in the planning process include the following:

National Forest Management Act (NFMA) (1976)

National Environmental Policy Act (NEPA) (1969)

Federal "Policy of Noxious Weed Management" (P.L. 93-629)

Federal Noxious Weed Act (1974)

Executive Order #13112 (1999)

Forest Service Manual (Chapter 2900) (USDA Forest Service 2011)

IPNF Weed Pest Management EIS (1989)

Bonners Ferry Ranger District Noxious Weed Control Project EIS (1995)

IPNF Land Management Plan (2015)

Topics and Issues Addressed in This Analysis

Purpose and Need

Early in the planning process for the BCRP, non-native, invasive plants were identified as potential resource concerns in the planning area. Additionally, existing decision documents do cover most roads within the project area, but one road was overlooked in that existing decision. Additionally, since the existing Bonners Ferry Weeds EIS was analyzed, a less toxic and effective pesticide has become available for use. As a result, the BCRP proposed activities now include all roads and trails in the project area, as well as use of amino-pyralid for control of non-native, invasive plants. As per existing Bonners Ferry Weeds EIS decision, all herbicides must be used in accordance with their label restriction, and all weed treatments must adhere to the IPNF Pesticide Discharge Management Plan and federal Best Management Practices.

Resource Indicators and Measures

Table 1. Resource indicators and measures for assessing effects to non-native, invasive plants

Resource Element	Resource Indicator	Measure (Quantify if possible)	Used to address: P/N, or key issue?	Source (Forest plan S/G; law or policy, BMPs, etc.)?
Weed spread or new weed establishment	Reduction in forest canopy cover	Acres of decreased forest canopy cover	No	BMPs
Weed spread or new weed establishment	Soil disturbance	Acres of potential soil disturbance	No	BMPs, Design Feature

Methodology

Information on current weed infestations and results of weed management in the project area is derived from observations during field surveys for rare plants (intensive, floristic surveys). Additionally, the botanist reviewed data regarding herbicide weed treatments in the project area.

Analysis was conducted based on current distribution of, and impacts to, weed species in habitats similar to those found in the proposed treatment areas and on the types of proposed project activities. The estimation of risk of weed spread and introduction of new weed invaders from the proposed activity is based on peer-reviewed literature, experience in the project area or similar sites in the Idaho Panhandle National Forests, and professional judgment of the North Zone Botanist.

Invasive plant establishment or spread can be influenced by existing conditions in the project area, including: presence of weeds in the project area; habitat vulnerability (related to existing plant cover, soil conditions, previous disturbance, shade levels, and moisture); and presence of weed spread vectors (such

as recreation areas, trails, roads, livestock or wildlife use areas, as well as wind patterns and diurnal drainage/flow).

Additionally, expected effects (both directly and indirectly) from the project are considered. Project-related effects are influenced primarily by two factors: the amount of sunlight reaching the forest floor (as a result of forest canopy cover changes) and the degree of soil disturbance. Soil disturbance (compaction, rutting, or displacement) can result in exposed, bare, mineral soil or changes to soil structure or productivity, both of which tend to allow invasive plant establishment on a site. Decreases in forest canopy cover or understory vegetation disturbance (caused by mechanical/ equipment logging, skidding, yarding, tree removal, burning, etc.) can result in more sunlight reaching the forest floor (or solar insolation), which also provides the high light conditions that most invasive plants require to germinate or expand.

Therefore, to determine potential risk of weed spread or new weed infestation, the botanist considers the existing condition of the forest stands. Then existing condition is compared to the proposed activities, including acres impacted, amount of change to forest canopy cover, and/or degree of soil disturbance.

Incomplete and Unavailable Information

I do not believe that there is any incomplete or unavailable information pertinent to this non-native, invasive plants assessment for the BCRP area.

Spatial and Temporal Context for Effects Analysis

Direct/Indirect Effects Boundaries

The spatial boundaries for analyzing the direct and indirect effects to non-native, invasive plants are generally the areas proposed for activities (i.e. treatment units, roads slated for maintenance, etc.) because those are the areas which could potentially incur soil disturbance and/or changes to solar insolation.

The period for measuring direct and indirect effects to non-native, invasive plants (weeds) and susceptible habitat is 10 years following completion of the proposed activities, or, in the event of selection of the no-action alternative, 10 years after the date of the signing of the decision notice. The 10-year period is based on the expected recovery and/or establishment of desired species in disturbed areas. Long-term effects to noxious weeds from loss of canopy cover are addressed below.

Cumulative Effects Boundaries

The cumulative effects analysis area describes the area beyond which effects of the proposed project cannot be detected. Determination of the cumulative effects area for weeds considered the extent of currently documented weed infestations and likely seed dispersal distances. While patterns of dispersal are not known with certainty for many plant species, in studies of *Botrychium virginianum* most spores fell within three meters of the source plant (Peck *et al*. 1990). Noxious weed species' seeds that are heavier than *Botrychium* spores might be assumed to have similar if not more restricted dispersal patterns. However, many weedy species disseminate either wind-borne seeds or seeds with Velcro-like hooks, designed to utilize animals as vectors. Therefore, transport of weed seeds out of the project area is possible due to wind, human, and animal vectors, with occasional transport over long distances (such as on vehicles). However, it would be difficult to predict the extent of such long-distance dispersal.

Wind currents (diurnal upslope/downslope surface winds) and animal movements would likely be influenced by vegetation types and vegetation abundance following the proposed activities. Therefore,

determination of the cumulative effects analysis area also considered the extent of soil and/or vegetation disturbance which would occur as part of the proposed action.

Given that most weed infestations within the project area occur in close proximity to road and trail corridors, the majority of noxious weed seeds will either continue to be moved up or down those corridors (via wind or vehicle, human, or animal vectors), or when adjacent to forest openings or trails, may be moved via the same vectors into recently disturbed areas.

Generally, air-borne weed seeds in forested settings would not be blown long distances, but would tend to fall somewhat close to the parent plant. The more trees and understory vegetation present adjacent to a weed population, the less distance air-borne weeds will likely move, as wind patterns and seed dispersal are slowed and blocked by vegetation. In addition, weed species composition and infestation levels adjacent to the project area appear similar to those inside the project area. For these reasons, the cumulative effects analysis area for noxious weeds includes National Forest System lands in the project area, as well as the roads to be utilized during project activities. Cumulative effects with regard to noxious weeds from proposed activities are generally described as very low, low, moderate or high, with the following definitions:

very low = no measurable effect on existing weed infestations or susceptible habitat

low = existing weed infestations and/or susceptible habitat not likely affected; establishment of new invaders not likely

moderate = existing weed infestations or susceptible habitat affected, with the potential for expansion into uninfested areas and/or establishment of new invaders

high = weed infestations and/or susceptible habitat affected, with a high likelihood of expansion into uninfested areas and/or establishment of new invaders.

The period for measuring cumulative effects to non-native, invasive plants (weeds) and susceptible habitat is 10 years following completion of the proposed activities, or, in the event of selection of the no-action alternative, 10 years after the date of the signing of the decision notice. The 10-year period is based on the expected recovery and/or establishment of desired species in disturbed areas. Long-term effects to noxious weeds from loss of canopy cover are addressed below.

Affected Environment

Existing Condition

Documented weed species in the project area include the following:

Table 2. Non-native, invasive plants in the BCRP area

Species	Infestation Level	State Noxious Weed Classification
spotted knapweed (*Centaurea stoebe*)	moderate	Containment
Canada thistle (*Cirsium arvense*)	low	Containment
orange hawkweed (*Hieracium aurantiacum*)	low	Control
meadow hawkweed (*Hieracium caespitosum* Dumort.)	moderate	Control
goatweed (*Hypericum perforatum* L.)	low	Not classified
oxeye daisy (*Leucanthemum vulgare* L.)	moderate	Containment
common tansy (*Tanacetum vulgare* L.)	moderate	Not classified

Isolated populations of some of these species occur in riparian areas, particularly common tansy, and orange hawkweed. The primary noxious weed populations, especially of knapweed, goatweed, thistle, hawkweeds, and daisy are associated with existing roads, including county-maintained, National Forest System (NFS) roads, and private roads. Weed infestation along road corridors is scattered and occurs at low to moderate levels within the project area. Overall weed infestation levels on National Forest System lands, outside of road corridors, are very low to low.

Noxious Weed Species of Concern in the Project Area

Meadow Hawkweed (*Hieracium caespitosum* Dumort)

Introduced from Europe as an ornamental plant, meadow hawkweed (*Hieracium caespitosum*) can be found in moist grasslands, forest meadows, abandoned fields, clear cuts, roadsides, established lawns and gardens. Once introduced into an area, it can quickly form dense patches. If not controlled, these patches can expand into large areas and displace desired native and forage species (Idaho Weed Awareness Campaign 2011).

Little information is available regarding meadow hawkweed's response to fire. Meadow hawkweed has been documented in burned areas following both wildfire (Anzinger and Radosevich 2008) and prescribed fire (Hanks 1971, Medve 1984, Mohlenbrock 1986). Meadow hawkweed exhibits some characteristics that make it likely to survive and/or establish after fire. Belowground rhizomes and adventitious root buds likely survive fire. Rhizomes, adventitious root buds, and stolons reportedly sprout after physical disturbance (NDDA 2007, Wilson and Callihan 1999), suggesting that postfire sprouting is possible. Meadow hawkweed seeds do not seem to persist in the soil seed bank. High-light conditions may favor meadow hawkweed sexual reproduction and vegetative regeneration (Carson and Root 2000).

Goatweed (*Hypericum perforatum* L.)

Goatweed (also known as St. Johnswort) is native to Europe, western Asia and North Africa. It was likely introduced to North America multiple times (Maron *et al*. 2004). The first recorded occurrence of the species in North America was from Pennsylvania in 1793; by the early 1900s it was established in many western states (Sampson and Parker 1930). Goatweed population levels were dramatically reduced following a successful biological control program begun in the 1940s in heavily infested regions of the western United States (Tisdale 1976).

Goatweed is a perennial species that reproduces both by seed and by often extensive lateral root growth that produces additional aerial crowns. In forested areas, it is commonly associated with disturbances such as roads, logging, grazing and fire. Where it occurs in forest zones in Idaho, it is abundant only in small, localized areas in naturally open ponderosa pine stands or where tree cover has been greatly reduced by logging, fire or other disturbance (Tisdale *et al*. 1959). Several studies suggest that goatweed requires abundant light for best development. In one study, plants subjected to 50 percent of full daylight almost all died after 15 days (Sampson and Parker 1930). More recent studies corroborate those findings (Parendes and Jones 2000). Both tree and shrub canopy cover have been observed to affect the abundance of goatweed in forested habitats on the Sandpoint Ranger District (Hammet personal observations 1999-2005).

The historic fire regimes of habitats in which goatweed occurs, range from relatively infrequent, high-severity fires in wet forest types to high-frequency, low-severity fires in ponderosa pine forests. The species established in most of these habitats after fire exclusion began, so it is unclear how historical fire

regimes might affect goatweed or how goatweed may affect these fire regimes (Fire Effects Information System 2011).

While it is generally purported that fire encourages establishment, vegetative spread and increased density of goatweed patches (Campbell and Delfosse 1984), the variation in the species' response to fire from study to study may reflect differences in plant community type, fire size and severity and/or season of burning. One 1975 study in north Idaho did not show any obvious changes in goatweed infestations following spring burning of brush-covered slopes and seeding with non-native herbaceous species. Goatweed seedlings are susceptible to competition from other species; multiple stresses such as defoliation by biological control agents and fire may also cause reductions in crown density of mature plants (Briese 1997).

Goatweed is well known for its medicinal and other commodity uses. However, hypericin, a chemical constituent of goatweed, causes photosensitization in animals that consume it; the effects of poisoning can lead indirectly to death. Its impact on native plant communities may not be as great as earlier literature seems to indicate, perhaps due to the moderate success of biological control efforts over the last 60 years (Fire Effects Information System 2011). The most commonly described impacts are loss of forage production and carrying capacity on rangelands and losses from livestock poisoning (Ruggiero *et al*. 1991).

Common Tansy (*Tanacetum vulgare* L.)

A native of Europe; common tansy was first introduced to North America for medicinal purposes and as an ornamental plant (USDA Forest Service 2005). It grows in sandy and loamy soils of open disturbed areas, roadsides, pastures, fields, prairies, hedgerows, gardens and naturally disturbed environments, such as flood-scoured river shores (USDA Forest Service 2005). Common tansy may threaten ecosystem health through reduction of wildlife habitat and species diversity.

Although seed dispersal may be the primary method for long-distance spread, common tansy regenerates from rhizome fragments (CWMA 2009, MDNR 2003, WDNR 2008) that can be dispersed by soil movement or equipment (CWMA 2009, Hilty 2009, Jacobs 2008). Common tansy seed viability in the seed bank is largely unknown (CWMA 2009), but speculation suggests a short-lived seed bank.

Common tansy is likely only top-killed by fire (Jacobs 2008). On sites with established common tansy plants, postfire sprouting from rhizomes is likely the predominant regeneration method. Because common tansy seeds can be dispersed long distances and seedlings establish best on sites with bare ground, little established vegetation, and high light levels (Kleijn 2003, White1997), burned areas could provide suitable establishment sites. Studies documenting common tansy recovery, establishment, and/or increases or decreases in abundance on burned sites are lacking. However, some sources suggest that burning may provide habitat suitable for seedling establishment (Elpel 2009, Jacobs 2008). These sources suggest that fire may result in increased abundance or facilitate spread of common tansy.

Oxeye Daisy (*Leucanthemum vulgare* L.)

Oxeye daisy is a European native that has spread to become a weed in 40 countries, from Africa to Australia and North and South America. Oxeye daisy is designated by the State of Idaho as a noxious weed with a priority of “Containment” (ISDA 2011b).

Oxeye daisy can survive over a wide range of environmental conditions. It is common in native grasslands, overgrazed pastures, waste areas, meadows, railroad rights-of-way, and roadsides. The species can grow on a wide range of soils, especially those low in pH and nutrients (Holm *et al*. 1997;

Howarth and Williams 1968; Olson and Wallander 1999). In Europe, oxeye daisy is found up to 70° north and 3300 feet in elevation.

Most ox-eye daisy seeds remain viable for twenty years in the soil, and can remain viable after passing through digestive tracts of animals (CAL-IPC 2011). The effects of prescribed fire on this species have not been studied (CAL-IPC 2011).

Spotted Knapweed (*Centaurea stoebe* L.)

Spotted knapweed is native to Eastern Europe. It was introduced to North America, probably as a contaminant in alfalfa seed and/or ships' ballast, in the late 1800s (Maddox 1979, Ochsmann 2001, Roche et al. 1986). In 1920, its distribution was limited to the San Juan Islands in Washington. By 1980, it had spread to 48 counties in the Pacific Northwest, and by 1998 its known range included every county in Washington, Idaho, Montana and Wyoming (Sheley et al. 1998).

Spotted knapweed is a perennial species that reproduces almost entirely from seed, although some plants extend lateral shoots below the soil surface that form new rosettes. It establishes and dominates on dry, disturbed sites, especially along roads (Roche et al. 1986). It also invades relatively undisturbed perennial native plant communities in the northern intermountain region (DiTomaso 2000).

Most studies of spotted knapweed to date have focused on its dominance of native grasslands and/or prairies (Tyser and Key 1988, LeJeune and Seastedt 2001, Ridenour and Callaway 2001). Much of spotted knapweed's dominance over native species in those habitats may be attributed in part to root allelopathy (Ridenour and Callaway 2001). Increased availability of nitrogen in what were historically nitrogen-limited habitats that favored native grass species, and the resulting creation of phosphorus and other resource limitations in grassland soils, may also be a factor in spotted knapweed's success in grassland habitats (LeJeune and Seastedt 2001). LeJeune and Seastedt (2001) hypothesize that manipulation of soil resource availability with traditional techniques such as fire can affect the dominance of invasive species such as Centaurea in grassland habitats.

In contrast, the Twentymile Creek project area is largely dominated by moist and mesic to dry forested habitats with a high shrub component. Non-forested habitats comprise a small portion of the project area (see Vegetation section of the EA). While the behavior of spotted knapweed in open grassland habitats may be mostly influenced by the above biotic factors, in forested habitats tree and shrub layer canopy cover is likely a major limiting factor.

Knapweed seeds are able to germinate under full canopy, but mature plants are uncommon in shaded areas (Watson and Renney 1974); it is typically found in open canopies, sometimes up to 20 percent but most often under canopy cover of five percent or less (Allen and Hansen 1999). Both tree and shrub canopy cover have been observed to affect the abundance of spotted knapweed in forested habitats similar to those in the Twentymile Creek project area (Hammet personal observations 1999-2005).

One study considered the effects of spotted and diffuse knapweed on the growth of conifer seedlings in a montane forest in southern interior British Columbia (Powell et al. 1997). The results of the study were that abundant knapweed growth did not negatively impact conifer growth and survival during the three-year study period. While Powell et al. (1997) concluded that the lack of effects to conifer seedling growth was likely due to abundant moisture levels during the study period, only the interaction between conifer seedlings and knapweed was measured - all other vegetation had been removed from the site and was cleared every season (Powell et al. 1997). Other site variables such as availability of light were therefore not considered.

The habitats in which spotted knapweed now occurs had historical fire regimes of relatively frequent, low-severity surface fires to mixed-severity fires. Spotted knapweed established in most of these habitats after fire exclusion began, so it is unclear how historical fire regimes might affect spotted knapweed or how spotted knapweed may affect these fire regimes (Fire Effects Information System 2008).

Low-severity fire typically does not kill spotted knapweed plants or seeds (Sheley and Roche 1982). According to LeJeune and Seastedt (2001), low-severity fires in grasslands may increase the availability of nutrients that would allow native species to successfully compete with spotted knapweed. Although severe burns may reduce germination of spotted knapweed seeds (Abella and MacDonald 2000), severe wildfire would probably favor expansion of knapweed by creating widespread areas of bare soil and increasing the amount of sunlight that reaches the ground surface (Arno 1999, Sheley et al. 1999). Spotted knapweed infestations have been associated with reductions in forage production (Harris and Cranston 1979), plant species richness and diversity (Tyser 1990), soil fertility (Harvey and Nowierski 1989, Olson 1999) and wildlife habitat (Bedunah and Carpenter 1989), as well as increases in surface water runoff and stream sedimentation (Lacey et al. 1989).

Current Weed Management Efforts

The Forest Service currently treats weeds in the project area rotationally, as funding allows, on NFS lands along several primary roads in the project area. The current level of weed treatment on private roads and private lands in the project area is unknown. As noted above, weed infestations on roads under other ownership are low and are scattered.

Of major concern are potential new invaders (see project file) not yet documented in the project area. In accordance with guidelines in the Northern Region Overview (USDA Forest Service 1999), management priorities emphasize identification and eradication of tansy ragwort, leafy spurge and yellow starthistle. Several additional weed species listed as noxious in Boundary or Bonner counties and recorded as occurring there have not yet been documented in the project area. These species would be a high priority for eradication if any individuals were observed during operations or monitoring in the project area. In addition, the State of Idaho maintains a list of weed species designated for "Early Detection and Rapid Response" to prevent their becoming established (ISDA 2011a).

The inclusion of weed treatment and prevention practices in timber sale contracts since 1998 has increased the likelihood of success in containing and reducing weed infestations throughout the district.

Environmental Consequences

Alternative 1 – No Action

Direct and Indirect Effects

Under this alternative, there would be no change from current management activities on NFS lands in the project area. Noxious weed management would continue to occur as the Bonners Ferry RD Noxious Weed Control EIS allows, which currently does not cover weed treatment along one road in the BCRP area. As a result, some existing weed infestations along that primary access road in the project area would remain and likely continue to spread. Although some weeds would be treated resulting in some direct effects to weed populations, the lack of comprehensive weed management throughout the area would indirectly allow some weed populations to continue to expand, as well as potentially allow new invaders to become established within portions of the project area.

Because there would be no temporary road construction, no road reconstruction, timber harvest or underburning, there would likely be no significant changes to forest canopy cover or significant soil disturbance. Therefore, there would be no direct impacts to noxious weeds. Therefore, the short-term risk of weed spread would not change from current levels, and the majority of the weed spread or expansion would continue to occur adjacent to existing roads and trails. Indirectly however, the continued increase in fuel loading could increase the long-term risk of weed introduction and spread in the context of a higher risk of widespread stand-replacing fires (see Fire and Fuels section of the EA).

Cumulative Effects

When combined with the following past, current and ongoing activities and events, the No Action alternative has potential cumulative effects on the spread of noxious weeds that differ from those of the action alternatives, as discussed below.

Past Activities and Events

Past wildfire suppression in the project area has increased the risk of severe, stand-replacing fires. Implementation of the no action alternative would not address these accumulated fuels in the project area. The risk of widespread stand-replacing fires would be higher under this alternative than under the action alternatives. There would, therefore, be a higher risk of widespread vegetation and/or soil disturbance, which would cause an increased risk of weed introduction and spread across the project area.

Ongoing Activities

Ongoing wildfire suppression in the project area would increase the probability of widespread stand-replacing fires. Implementation of the no action alternative would contribute to the continued accumulation of fuels in the project area (see Fire and Fuels report.) As fuels continue to accumulate, the probability of severe stand-replacing fires, and the resulting widespread vegetation and/or soil disturbance, would lead to an increased risk of weed spread and introduction across the project area.

Reasonably Foreseeable Actions

Noxious weed treatment and monitoring would continue to follow guidelines and priorities established in the Bonners Ferry RD Noxious Weeds Control Project EIS (USDA Forest Service 1995). Therefore, weed treatment or management within the BCRP area would be somewhat limited. As a result, the no action alternative would indirectly result in increased potential for new invaders to establish, as well as continued weed spread within the BCRP area in those areas not currently authorized for treatment by the Bonners Ferry RD Noxious Weeds Control Project EIS. However, weed infestations would likely continue to expand primarily adjacent to road and trail corridors because without timber harvest or burning activities to reduce adjacent forest canopy cover and/or produce soil disturbance, weeds will likely not have substantial suitable habitat to spread elsewhere.

Summary of Effects of No Action

In the short term, the no action alternative would contribute a very low level of cumulative effects to the risk of weed spread. However, the no-action alternative does not provide for improved noxious weed treatment in the project area. Therefore, although forest canopy cover and soil disturbance would not likely occur off of the road prisms, existing weed populations along road and trail corridors will likely continue to spread along those corridors. Furthermore, if new invader species are introduced into the area, without effective treatment, they would likely become established and expand similar to existing weed populations.

Over the long term, implementation of the no action alternative would further increase the risk of widespread stand-replacing fires. Should such a fire occur, it would likely cause existing infestations to

spread to previously uninfested areas. It would also provide the disturbance that would allow dormant weed seeds in the soil to germinate. However, the occurrence and intensity of a future wildfire in the project area is difficult to predict.

Alternative 2 – Proposed Action

The BCRP proposes to treat about 9 percent of the forest stands (3,433 acres) in the project area using commercial harvest and 18 percent (7,407 acres) using prescribed fire only. Of the commercial harvest acres, approximately 2,872 acres would be harvested as a "Seed-tree harvest with reserves" (regeneration harvest); 127 acres would be harvested as "Shelterwood harvest with reserves" (regeneration harvest); and 434 acres would be harvested as a "Group Selection harvest" (thinning/intermediate harvest).

In inaccessible areas of the project, located primarily in roadless areas, prescribed burning would be used on about 7,400 acres to create a mosaic of openings in the forest canopy, reduce fuel loading and continuity across the landscape, and return the role of fire back into the local ecosystem.

We propose about 76 miles of road maintenance and reconstruction, 3.2 miles of temporary road construction, 13.4 miles of road storage, and 0.7 mile of road decommissioning. In order to improve access to the River Walk trailhead we propose to change the closure period to April 1 through June 15 for Road 2209. We also propose to treat weed populations along trailheads and roads within the project planning area using USFS approved herbicides and weed management practices.

Trail management includes improving turnarounds and parking at six trailheads. Road 1304G is proposed for storage. We propose to store this road and convert its surface to a non-motorized biking trail, which will serve as an additional single track access to Trail 51. Other recreational improvements include an interpretive trail at the Boulder City ghost town (site 10BR0027), a toilet, and a parking lot to support the increasing recreational pressure this area receives.

Logging equipment used to implement the harvest would include ground based equipment on 1,862 acres, skyline machinery on 631 acres, a combination of ground based and skyline on 595 acres, and helicopter on 345 acres. Fuels reduction treatments would occur in the 3,433 acres of commercial harvest units using grapple piling and prescribed fire. About 800 acres of precommercial thinning is also proposed that would be carried out using chainsaws. Precommercial thinning would not result in any biomass removal. The prescribed burning would reduce the amount logging slash, prepare the areas for seedlings and stimulate browse plants for wildlife. A fuel break 22 acres in size would also be implemented on Black Mountain below the lookout.

Alternative 3

Alternative 3 is composed of the same proposed actions as in alternative 2, less any activities in the Inventoried Roadless Areas (IRAs). The only activities therefore reduced within Alternative 3 are prescribed burning, which would be reduced from 7,407 acres proposed in Alternative 2 to only 172 acres of prescribed burn only treatments in Alternative 3.

Project Design Features and Mitigation Measures

The following design features and mitigation measures would be implemented with the BCRP to reduce potential of new non-native, invasive species establishment or spread.

1. Gravel or borrow pits to be used during road construction or reconstruction would be free of new weed invader species (as defined by the IPNF NZ Botanist.) A list of suitable borrow pits (those which either are State-certified as "weed free" or those National Forest System (NFS) borrow

pits which are routinely treated for weed control) is included in the project file. A list of weed species considered to be potential new invaders is also included in the project file.

2. Road segments identified for weed treatment and proposed for decommissioning or storage would be treated prior to decommissioning or closure.
3. Weed treatment of all haul routes and landings on NFS lands would occur prior to ground disturbing activities where feasible. If the timing of ground disturbing activities would not allow weed treatment to occur when it would be most effective, it would occur in the next treatment season following the disturbance.
4. All timber sale and/or public works contracts would require cleaning of road maintenance and off-road equipment prior to entry onto NFS lands. If operations occur in areas infested with new invaders (as defined by the IPNF NZ Botanist), all equipment would also be cleaned prior to moving to new sites.
5. All newly constructed roads, skid trails, landings, fuel breaks or other areas of disturbance (including cut/fill slopes, as well as maintenance and reconstruction of existing roads) would, upon activity completion, be seeded with the most current IPNF native, moist site, locally-adapted, blue tag- certified, weed-free seed mix. (Lists available from the NZ Botanist.) Areas would also be fertilized and/or mulched if deemed necessary by the Soil Scientist or NZ Botanist. Revegetation species utilized should be source-identified, site-appropriate, and genetically-adapted to the project area, when feasible, to comply with FSM 2070. Areas that are underburned would be evaluated by the North Zone Botanist or Forest Soil Scientist following the burning activity and seeded/revegetated, mulched, and/or fertilized as necessary.
6. When reseeding is necessary, seeding would occur during an appropriate season (spring or fall) or weather conditions (at least 2 weeks prior to forecasted cooler, wetter weather) to ensure the most effective germination/establishment.
7. Materials used for mulching, erosion control, or watershed restoration activities would be either locally-sourced coarse wood straw, certified weed-free straw, or in the case of hydromulch, cellulose fibers.
8. All noxious weed treatment would be conducted according to guidelines and priorities established in the Bonners Ferry Noxious Weed Control Project FEIS (USDA 1995), or in accordance with methods described in the Boulder Creek Restoration Project (BCRP) proposed action. Methods of control may include biological, chemical, mechanical and cultural. Follow-up treatments and monitoring would be conducted as needed.
9. Any priority weed species (as defined by the IPNF NZ Botanist) identified during road maintenance or timber harvest would be reported to the District Weed Specialist to aid in monitoring and expedite treatment. A list of priority or “new invader” weed species is included in the project file.
10. Monitoring of all haul routes and service landings on NFS lands would occur during project implementation, with treatment of identified weed infestations as needed.

Direct and Indirect Effects – Effects Common to Alternatives 2 and 3

With implementation of any of the action alternatives, seeds from any weeds in the project area may still be transported within and out of the area by wind, vehicles, people, birds, and wildlife. Untreated weed infestations on other ownership lands in the cumulative effects analysis area could spread to public lands.

Although not caused by proposed activities, the existing condition of the forest floor vegetation also plays a role in what plants establish or initiate following disturbance. For instance, in dense forest stands which are barren of forest floor vegetation (or depauperate), noxious weed introduction might be more likely following timber harvest than in a forest stand which is more open and already has many shrubs or forbs in the understory. This phenomenon has to do with natural succession and available growing space for plants versus capacity of a site. If shrubs or forbs are already present in the understory of a forest then those shrubs or forbs can respond, growing and reproducing quickly, following timber harvest and in the presence of more available sunlight. If a forest stand is depauperate in the understory, then following timber harvest and subsequently more available sunlight, all plants (native shrubs, forbs, grasses, and noxious weeds) compete with one another to become established on the site. In such cases, noxious weeds might have the establishment advantage because most weedy species tend to establish quickly from seed.

With implementation of any of these action alternatives, some amount of timber harvest, precommercial thinning, and underburning would occur. Although the acreage totals of activities varies between alternative, the potential for direct and indirect effects are similar between the action alternatives and are described below. Differences between the alternatives would merely be the number of acres slated for prescribed burning only (Alternative 2 -7,407 acres prescribed burning only; Alternative 3- 172 acres prescribed burning only). Because timber harvest and burning activities often result in significant changes to canopy cover, as well as the potential for soil disturbance (both issue indicators which can impact weed establishment and spread), those impacts are described.

Silvicultural Treatment Prescriptions

Silvicultural treatments are those activities designed to manipulate the forest stands to meet certain objectives. Often, activities are non-commercial (as in pruning, pre-commercial thinning of seedling and sapling stands, or burning); however, many of the silvicultural activities described below are generally considered commercial because the by-product of this management can be commercially harvested as timber.

Regeneration harvests generally remove most of the overstory or larger trees in the forest canopy, resulting in increased solar insolation on the forest floor following harvest. Therefore, regeneration harvest activities generally result in an increased risk of weed spread due to significant forest canopy reduction and subsequent conducive habitat in which weeds tend to germinate and expand. In comparison, other harvest types (intermediate harvests or thinning) typically remove less forest canopy cover and therefore result in a lower risk of weed spread/dispersal or new weed introduction because solar insolation on the forest floor is still low-light to moderate-light, and weeds would not have a distinct competitive advantage over other native plants in the understory.

Under each of the action alternatives uneven-aged/group selection harvest (intermediate treatments) and pre-commercial thinning would occur. For these silvicultural treatments, the risk of weed introduction and spread from canopy cover reduction would be low, because these treatment types typically result in only slight changes in canopy cover of the overstory.

Regeneration harvest (even-aged treatments) would also occur under any of the action alternatives. This silvicultural treatment produces significant canopy openings, usually while retaining scattered overstory trees and residual patches of trees. Under any action alternative, some scattered trees and patches would be retained even within regeneration harvest areas, to reduce impacts to the visual resource or to provide seed stock or shelter to the next forest stand. Because these treatment types result in significant changes to canopy cover, these treatment areas can result in a moderate risk of weed introduction and spread.

Logging Systems

The risk of weed spread from soil disturbance in proposed commercial timber harvest units depends just as much on logging systems as on the type of silvicultural treatment prescribed – these risks are discussed below.

Where logging would be accomplished through hand-falling and yarding would be accomplished with skyline cables, there would be less soil disturbance than with mechanical harvesting and/or ground-based logging or yarding activities. Therefore, the risk of weed spread would be lower for skyline harvested areas than where ground-based logging would occur. Harvesting and yarding performed when soils are frozen or when snow cover is present also typically result in less soil disturbance than when similar harvests are performed spring through fall seasons. Therefore, such "winter" harvesting typically results in reduced potential new weed infestations than with harvests performed in other seasons.

Ground-based harvest activities would occur under either of the action alternatives. Ground-based harvest could include tractor yarding, tractor with line pulling, tractor swing and cut-to-length. Traditional ground-based logging systems generally have yarding/skidding corridors every 50-100 feet, and trees are generally felled or skidded into the corridors, where equipment yards trees in repeated trips along these corridors to a log landing. Unless performed when soils are frozen or snow-covered, these logging systems often result in moderate to high potential for soil disturbance (including compaction) or displacement, depending upon soil moisture conditions and existing vegetation cover. However, harvester/forwarder ground-based systems do create less soil compaction and displacement because these systems allow for lopping branches in the forest, piling those limbs/tops/slash in front of the equipment, and driving on that slash mat. As a result of any of the action alternatives, there is a moderate risk of weed spread from adjacent weed populations along roads into the ground-based harvest units; however, when ground-based systems are utilized when soils are frozen or snow-covered or when harvester/forwarder systems are operated on slash mats, risk of weed spread and new weed establishment can be reduced to low to moderate.

Skyline-harvest activities would also occur under any of the action alternatives. Because skyline yarding typically suspends or partially-suspends logs off of the ground (using a cable system), the impacts on soils by this system are reduced from standard ground-based yarding systems. Skyline yarding typically only creates soil disturbance within corridors, and the disturbance is typically a displacement/rutting of soils as log ends are dragged uphill by the cable system. Thus, risk of weed spread for this logging system is generally low and generally would only occur along road corridors into adjacent, recently-harvested skyline corridors.

There is also potential for some of the proposed units to be harvested using a combination of the above two systems (sometimes referred to as "swing" systems.) Because these systems are literally a combination of part of the units being harvested using ground-based systems and other portions of units by skyline-yarded, the effects on noxious weed spread would be somewhere in between those effects described above. Generally, these systems will result in low to moderate risk of weed spread where ground-based harvest is conducted and low risk of weed spread into skyline-harvest corridors, depending upon soil moisture conditions and existing vegetation cover.

Additionally, portions of the project area may be potentially helicopter yarded where areas are not easily accessed via roads. Such helicopter yarding generally results in the least amount of soil disturbance of the different yarding types (in those areas where trees are hand-felled- not felled using ground-based equipment).

Regardless of logging and yarding system utilized, harvest activities on snow or frozen soils, or on slash mats, substantially mitigates risks to soil disturbance; thereby, reducing potential for new weed introduction or spread.

Fuels Treatments

Following timber harvest, all action alternatives propose a combination of different fuel treatments to dispose of slash and other natural fuels, including underburning, limbing and lopping, as well as excavator (grapple) piling and burning piles. Additionally, all action alternatives propose some un-harvested areas be underburned for ecosystem benefit and to improve wildlife browse.

Underburning and prescribed burning would produce vegetation disturbance that might lead to a spread of some weeds, particularly goatweed and thistles. Such burning typically varies in intensity of effects across the landscape. Some areas incur very little loss of shrub or forest canopy cover, while other areas can result in complete loss of shrub or forest canopy cover.

The risk of weed spread in areas proposed for underburning would vary for different plant communities. Those dry forest types where shrub species are predicted to dominate may be at lower risk, while dry grass and forb-dominated communities may be at higher risk for weed invasion, depending on the season and severity of the burn in each community type. For example, ninebark sprouts vigorously following a fire and has been found to be more abundant on burned than unburned locations (Noste and Bushey 1987). Recovery of the shrub component will eventually shade out many weed species, especially St. Johnswort (Fire Effects Information System 2011). Typically our moist-forest habitats within the majority of the BCRP area will be shrub-dominated for 5-25 years following a fire disturbance. Therefore, the risk of weed spread following underburning is highest for the first 1-5 years following the disturbance, while canopy coverage (comprised of shrubs and trees) re-establishes. Following that period of time, as shrub and tree cover increases the risk of weed spread and new weed introduction into the treatment areas slowly declines.

In addition, severity of burning can vary across the landscape, sometimes resulting in bare, mineral soil exposure (which could lead to increased risk of weed establishment.) However, mitigation designed to reduce effects to soils will likely minimize bare, mineral soil exposure and severe soil disturbance.

Machine piling would also produce ground disturbance that would be conducive to the spread of weedy species, similar to ground-based harvest activities. However, the the spatial extent of those impacts is reduced from ground-based harvest activities because not all fuels are piled; some slash and debris are left on-site to retain soil productivity.

Required design features as described above and in the BCRP Environmental Assessment would reduce but would not eliminate this risk.

Road Maintenance, Reconstruction, Temporary Road Construction, or Road Storage/ Decommissioning Activities

All action alternatives would result in the need for road maintenance, improvement (such as culvert replacement, and aquatic organism passage improvement), reconstruction, storage and/or decommissioning activities.

Requirements for cleaning of off-road and road construction equipment and pre-treatment of any new weed infestations on the roads proposed for storage followed by preventive seeding would reduce the risk of weed introduction and spread over time to current levels. In addition, newly decommissioned roads would be monitored to detect new weed invaders and to assess the success of preventive measures. Without the recurring disturbance of road maintenance and use, and with increasing canopy coverage of

desired species, risk of weed establishment and spread on the decommissioned roads would decline over time to below the level for open or gated roads.

For those areas proposed for temporary road construction or those roads which will remain open and are proposed for road maintenance, reconstruction, or improvements, requirements for cleaning of off-road and road construction equipment, as well as pre-treatment of existing road-associated weed infestations will help to reduce the potential for additional weed spread and new weed species establishment.

Recreation Enhancements

Recreation enhancements within the BCRP area would occur with implementation of any action alternative (Alternatives 2 or 3). Although recreation enhancements would likely result in some soil disturbance, this disturbance usually occurs where high recreational use is already occurring (i.e. adjacent to roads, trails, or dispersed camping areas). Furthermore, the likely soil disturbance associated with these planned activities would be very limited in size and scale. Additionally, recreation enhancements are not likely to result in significant changes to forest canopy cover. Therefore, the effects of implementing recreation enhancements associated with any action alternative on the spread of existing weed populations or introductions of new weed infestations would be very low to low.

Weed Treatments

With implementation of any of the action alternatives, enhanced treatment of non-native invasive plant species (weeds) would also begin occurring in the project area. (As stated before, portions of the project area lack management decisions allowing weed treatment.) Weed treatment, using methods and protocols described by the Bonners Ferry Noxious Weed EIS (USDA 1995) and as directed in the Forest Service "Best Management Practices for Chemical Use" and the Idaho Panhandle National Forests Pesticide Discharge Management Plan, would directly only effect plants within the actual weed treatment area. Weed treatments do not typically result in any soil disturbance or loss of forest canopy cover. Therefore, even though timber harvest, prescribed burning, and road maintenance/reconstruction work may increase the potential for spread of existing weed populations, these action alternatives will also improve the ability to begin containing or reducing existing weed populations through routine treatments and will allow for rapid response/herbicide treatments when new weed infestations are located in the area. As a result, overall weed spread and new weed infestations resulting from implementation of alternatives 2 or 3 will likely be low to moderate, which is lower risk than would occur if timber harvest, prescribed burning, or road maintenance/reconstruction activities were to be implemented without the allowance of weed treatments.

Summary of Expected Direct and Indirect Effects for Alternatives 2 and 3

Because both action alternatives (Alternatives 2 and 3) include timber harvest, fuels treatment, recreation enhancements, road re-construction, maintenance, improvements, and/or road decommissioning, there is a greater short-term risk of weed introduction and spread than with the alternative 1 (no action.) The risks and potential for direct and indirect effects on weed spread associated with proposed activities are discussed below.

The risk of spread of existing weed infestations from project activities would vary based on the proximity of a weed seed source to areas of disturbance. A moderate to high risk of weed spread would likely be associated with regeneration (even-aged) silvicultural treatments, ground-based logging systems, and new road construction. Moderate risk of weed spread would likely be associated with skyline type harvest systems, thinning (uneven-aged) silvicultural treatments, prescribed burning and road maintenance, improvement, reconstruction, or decommissioning activities. Very low to low risk of weed spread might

be associated with pre-commercial thinning activities and recreation enhancement activities. Project design features would reduce but would not eliminate those risks.

Preventive seeding (using source-identified, site-appropriate, locally-adapted, native and desired non-native species) for disturbed sites (such as landings and roads proposed for decommissioning) would also reduce but not eliminate the risk of introduction of new weed invaders. Contract requirements to clean off-road harvest and road construction equipment prior to entry into the sale area would also reduce but would not eliminate the risk of introduction of weeds.

However, as stated before, implementation of any of these action alternatives would also allow weed treatments (which is currently limited in the project area.) Monitoring and treatment of new weed infestations discovered on NFS lands would reduce the risk that any new weed infestations would become established. The risk of establishment of new weed invaders to the project area is expected to be low with implementation of the required design features. Furthermore, weed treatments of existing weed populations (both pre- and post-haul, as well as routinely on certain forest routes) will greatly reduce the overall effects that other proposed activities may have on potential weed spread.

Cumulative Effects – Alternatives 2 and 3

Cumulative effects regarding susceptibility to weeds would be associated with ground disturbing activities proposed under any of the action alternatives. Over the long term, the loss of tree canopy cover from implementing the proposed activities is considered temporary. As tree canopy closes, those areas proposed for harvest and/or underburning would have decreased susceptibility to noxious weed infestation and spread. This process could take 40-50 years. In areas with a higher shrub component, recovery of the shrub canopy layer would be much quicker. For example, Merrill (1982) found that twig densities on ninebark increased through the third post-fire growing season and that shrub heights on burned and unburned sites were equal by the fourth season.

Past Activities and Events

Past wildfire suppression in the project area has increased the risk of severe stand-replacing fires (see Fire and Fuels section of the EA). The proposed treatments under any of the action alternatives would reduce the current fuel loading, thereby reducing the risk of widespread wildfire disturbance conducive to weed establishment and spread.

Current and Ongoing Activities

While wildfire suppression in the project area would continue in order to protect multiple resource values, the proposed action would, to some degree, increase the ability to safely use prescribed fire and periodically reduce fuel loads and to suppress an unwanted wildfire (see Fire and Fuels section of the EA). When combined with the proposed action, ongoing wildfire suppression would decrease the probability of severe, stand-replacing fires. There may be a lower risk of widespread, severe disturbance of vegetation, soil and tree canopy than under the no action alternative.

Reasonably Foreseeable Actions

Noxious weed treatment and monitoring would follow guidelines established in the Bonners Ferry Noxious Weeds Control Project EIS (USDA Forest Service 1995.) Because any of the action alternatives would include weed treatment coverage, the project area roads located on NFS lands would be monitored for weed introduction and treated as needed. Mitigation measures to reduce the risk of weed spread from project activities would reduce the risk that weeds may become established in the project area.

Existing Infestations

Cumulative effects with regard to existing weed infestations are expected to be moderate under any of the action alternatives, considering the following:

Moderate to high populations of some weed species (listed above) are already present adjacent to road prisms in the project area. A large percentage of the proposed treatments under both alternatives would undergo regeneration harvest, ground-based logging, and underburning of resultant fuels. All of these factors contribute to an expected moderate to high risk of weed spread from those existing weed infestations into adjacent treatment areas. However, the additional allowance to begin regular weed treatment (including road pre-treatment) in this area will help contain or reduce the existing weed populations and may reduce the potential for those existing weed populations along roads to spread. Therefore, the cumulative effects of alternatives 2 and 3 (and their associated design features and mitigation measures) on existing weed infestations will likely be moderate.

New Invaders

Under any of the action alternatives, cumulative effects with regard to new invaders are expected to be low when combined with all of the above past, current, ongoing, and reasonably foreseeable actions. Under alternatives 2 and 3, because design features are intended to detect and eradicate new invaders and weed treatments will begin on a regular basis within the project area, no new invaders are expected to become established.

Determination of Cumulative Effects

The areas proposed for treatment are already influenced substantially by the adjacent uses and recreation on public lands. Heavily traveled roadways are already conduits for established weed infestations. Weed infestations within the BCRP project area are moderate, and the activities associated with all the action alternatives would increase the potential for existing weed populations to spread outward away from roads into adjacent treatment areas (particularly those planned for regeneration or even-aged). The introduction of disturbance to the project area also increases the risk of new weeds becoming established in the area. However, as noted above, the additional proposed action of weed treatment in the project area will help to reduce the existing weed populations and help to somewhat reduce the potential for existing weed spread or new weed establishment.

When combined with all of the above past, current and reasonably foreseeable activities, overall cumulative effects of all action alternatives with regard to noxious weeds are expected to be low risk for new weed invaders to establish and moderate risk for existing infestations of spotted knapweed, thistles, common tansy, oxeye daisy, meadow hawkweed and goatweed to spread.

Summary

Summary of Environmental Effects

Table 3. Summary comparison of environmental effects of BCRP on non-native, invasive plants

Resource Element	Indicator/Measure	Alt 1	Alt 2	Alt 3
Weed spread or new weed establishment	Reduction in forest canopy cover	No timber harvest or road maintenance, construction, or storage/ decommissioning activities will occur. So, no action would result in no changes to forest canopy cover.	Approximately 3,433 acres of timber harvest (2,999 acres of which would result in forest regeneration) and 7,407 acres of prescribed burn only would likely result in significant decreases in forest canopy cover for approximately **10,406** acres. As a result, these acres are at moderate risk for weed spread (especially adjacent to roads and trails), and low risk for new weed establishment.	Approximately 3,433 acres of timber harvest (2,999 acres of which would result in forest regeneration) and 172 acres of prescribed burn only would likely result in significant decreases in forest canopy cover for approximately **3,171** acres. As a result, these acres are at moderate risk for weed spread (especially adjacent to roads and trails), and low risk for new weed establishment.

Resource Element	Indicator/Measure	Alt 1	Alt 2	Alt 3
Weed spread or new weed establishment	Soil disturbance	No timber harvest or road maintenance, construction, or storage/ decommissioning activities will occur. So, no action would result in no significant changes to soil disturbance.	Approximately 3,433 acres of timber harvest (2,457 acres of which would entail ground-based harvest) and 7,407 acres of prescribed burn only treatments. As a result, approximately **9,864** acres would likely be at risk for some soil disturbance, which also means potential for weed spread (especially adjacent to roads and trails), as well as new weed establishment. In addition, approximately **93.3** miles of road are slated for maintenance, storage, decommissioning, or new temporary construction activities, all of which result in soil disturbance and serve as potential conduits for weed spread.	Approximately 3,433 acres of timber harvest (2,457 acres of which would entail ground-based harvest) and 172 acres of prescribed burn only treatments. As a result, approximately **2,629** acres would likely be at risk for some soil disturbance, which also means potential for weed spread (especially adjacent to roads and trails), as well as new weed establishment. In addition, approximately **93.3** miles of road are slated for maintenance, storage, decommissioning, or new temporary construction activities, all of which result in soil disturbance and serve as potential conduits for weed spread.

Compliance with the Forest Plan and Other Relevant Laws, Regulations, Policies and Plans

Three distinct management areas (MAs) (designated in the IPNF 2015 Forest Plan) occur within the overall BCRP area: MA4a (Research Natural Area), MA5 (Backcountry), and MA6 (General Forest.). The MA4a is the Hunt Girl Creek Research Natural Area (RNA), and no proposed activities occur within this management area. All of the BCRP proposed treatments occur within MA6 or MA5 lands.

According to IPNF Forest Plan (USDA 2015) direction, a desired condition (FW-DC-VEG-10) is that "newly invading, non-native invasive plant species are treated and populations are contained or eradicated. The weed program on the Forest uses integrated pest management approaches, including prevention and control measures that limit introduction, intensification, and spread due to management activities. Agreements and cooperatives weed management areas assist in control efforts across jurisdictional boundaries." To that end, an objective (FW-OBJ-VEG-02) specifies that every decade: a) all sites that are discovered with newly-invading non-native invasive species are treated; and b) treatment of approximately 15,000 to 30,000 acres to reduce non-native invasive plant density, infestation size, and/or occurrence.

The proposed activities help make progress towards achieving forest plan desired condition (FW-DC-VEG-10) by incorporating integrated pest management approaches, including prevention, through project design, to prevent new weed species from becoming established. Furthermore, implementation of the proposed activities (including more comprehensive treatment areas in the project area), along with ongoing weed management treatments in the area, as well as collaborative pest management actions with cooperators, will help to treat newly-documented occurrences of new invaders and existing infestations of widespread weed species in the project area and will allow the District to make progress towards achieving FW-OBJ-VEG-02.

The no action alternative actually makes achieving the forest plan desired condition (FW-DC-VEG-10) difficult because integrated pest management principles, including early detection/rapid response treatments of new invader weed species, is not fully covered (for all roads in the project area) under existing Bonners Ferry Noxious Weeds EIS for the project area. Therefore, the no action alternative will not allow attainment of forest plan objective, FW-OBJ-VEG-02.

Executive Order 13112 defines [noxious weed] control "…as appropriate, eradicating, suppressing, reducing, or managing invasive species populations, preventing spread of invasive species from areas where they are present, and taking steps such as restoration of native species and habitats to reduce the effects of invasive species and to prevent further infestations" (E.O. 13112, Section 1B). The proposed activities align with this Executive Order both by enacting measures to prevent new weed establishment, and also by taking steps to pro-actively monitor for new weed introductions or spread from existing weed infestations, so that treatments can be implemented effectively.

At the project level, noxious weeds have been identified and weed prevention measures incorporated into the proposed activities. The potential for weed spread was disclosed for the proposed actions.

Mitigation measures described above to reduce the risk of weed spread (see Design Features, page 11-12) are as required in Forest Service Manual Chapter 2900 (USDA Forest Service 2011.) FSM requirements and regulations related to noxious weeds are included in the project file.

According to Executive Order 13112 (1999), "Federal agencies whose actions may affect the status of invasive species, shall, to the extent practicable and permitted by law, identify such actions; subject to the availability of appropriations and within Administration budgetary limits, use relevant programs and authorities to: (i) prevent the introduction of invasive species; (ii) detect and respond rapidly to and control populations of such species in a cost-effective and environmentally sound manner; (iii) monitor invasive species populations accurately and reliably; (iv) provide for restoration of native species and habitat conditions in ecosystems that have been invaded; (v) conduct research on invasive species and develop technologies to prevent introduction and provide for environmentally sound control of invasive species; and (vi) promote public education on invasive species and the means to address them; and not authorize, fund or carry out actions that it believes are likely to cause or promote the introduction or spread of invasive species…unless…the agency has determined and made public its determination that the benefits of such actions clearly outweigh the potential harm caused by invasive species; and that all feasible and prudent measures to minimize risk of harm will be taken in conjunction with the actions."

Noxious weed management within the BCRP area (the proposed action), as directed by Federal and State laws and the Bonners Ferry Ranger District Noxious Weed Control Project FEIS (USDA Forest Service 1998), meets full compliance with the Federal "Policy of Noxious Weed Management" (P.L. 93-629), the Federal Noxious Weed Act of 1974, Idaho Code 24 Chapter 22, and Executive Order 13112.

Because the Council for Environmental Quality regulations for implementing the procedural provisions of the National Environmental Policy Act (NEPA) require Federal agencies to "Integrate the requirements of

National Environmental Policy Act (NEPA) with other planning and environmental review procedures required by law or by agency practice so that all such procedures run concurrently rather than consecutively" (40 CFR Sec. 1500.2), the Bonners Ferry Ranger District Noxious Weed Control Project FEIS (USDA Forest Service 1995) was designed to coordinate and implement all pertinent federal and state laws and procedures concurrently. Therefore, the Bonners Ferry Ranger District Noxious Weed Control Project and the Boulder Creek Restoration Project comply with the regulation at 40 CFR 1500.2.

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